

Engineering Analysis  
Borbet-Alabama, Inc.  
Auburn, AL  
204-0040

On January 8, 2008, the Department received air permit application forms from Borbet-Alabama, Inc. (formerly Stahlschmidt and Maiworm USA, Inc.) for the proposed modifications to the existing Synthetic Minor Operating Permit No. 206-0040-X001 for the Six Aluminum Reverbatory Melting Furnaces and the existing Synthetic Minor Operating Permit No. 206-0040-X002 for the Twenty-Six (26) Low-Pressure Die Casting Machines located in Auburn, Alabama. Additional information was received on January 28, 2009 and February 5, 2009. The facility would like to modify the following:

- Remove three of the melting furnaces contained in Synthetic Minor Operating Permit No. 206-0040-X001.
- Decommission one aluminum melting furnace contained in Synthetic Minor Operating Permit No. 206-0040-X001 and replace it with a larger melting furnace.
- Add four low pressure casting machines to Synthetic Minor Operating Permit No. 206-0040-X002.

In addition, the facility proposes to add a secondary aluminum production line to process and melt the recycled scrap aluminum generated onsite. The production line would include a scrap shredder, centrifuge, collection bin, heated screw, and an aluminum melting furnace, which would process contaminated aluminum scrap.

**Facility Description**

Borbet-Alabama, Inc. (Borbet) is an aluminum alloy wheel manufacturing facility. The facility is currently permitted to melt clean charge aluminum material. The facility is considered a synthetic minor source and currently holds the following Synthetic Minor Operating Permits:

**Permit Number**

**Permit Description**

206-0040-X001	Six Aluminum Reverbatory Melting Furnaces
206-0040-X002	26 Low-Pressure Die Casting Machines
206-0040-X003	Four Heat Treating Ovens
206-0040-X007	Coating Process-Painting
206-0040-X008	Coating Process-Powder Coating with Baghouse
206-0040-X009	Pretreatment (Metal Cleaning)
206-0040-X010	12 Loesers (Scouring/Grinding) Booth with dust collector

## **Project Description**

### Aluminum Scrap Processing Line

The facility is proposing to install an aluminum scrap processing line. The line would consist of a shredder with screen, centrifuge, collection bin, heated screw, and aluminum melting furnace. Aluminum chips would be loaded into a shredder via a loader. The aluminum chips would be lightly coated with collants and cutting oil from machining operations. Any fines created from the shredding and screening operations would be removed and disposed of in the form of a sludge-like material. Following the shredder, the uniform sized chips would be transported by a dosing screw conveyor to feed the centrifuge. The centrifuge would remove any coolant material that may be present on the chips leaving the chips with a residual moisture content of 2% or less. Following the centrifuge, the aluminum chips would be sent to a chip storage system/bin via an enclosed conveyor prior to entering the heated screw. Material would be moved through the system via a vacuum suction unit and all air flow would be contained in the closed system. The air flowing through the system that may contain some aluminum dust generated by the chip processing system would pass through a separator/filter system to remove the particulate matter prior to entering the ship storage bin. The aluminum chips from the storage bin would be sent to the heated screw in order to meter the chips into the melting furnace. In addition, the exhaust from the melting furnace stack would be circulated into the heated screw to further remove moisture and any remaining cutting oils from the chips and preheat the chips prior to being introduced to the melting furnace. In this setup, the melting furnace would act as an afterburner with a furnace room temperature of 1400 °F. The chips would then be melted in an existing Hi-Tec 4500 melting furnace.

The second aspect of the processing line would be to introduce painted/coated scrap wheels generated onsite directly into the back of the melting furnace. Since the furnace contains a large furnace room, the furnace room would function again as an afterburner. Due to the high temperature and long residence time associated with the large furnace room, any remaining organics would be thoroughly combusted before exhausted through the stack.

### Six Aluminum Reveratory Melting Furnace (SMOP No. 206-0040-X001)

Borbet would like to remove three of the melting furnaces contained in Synthetic Minor Operating Permit No. 206-0040-X001. In addition, the facility would like to decommission an existing furnace and replace it with a larger melting furnace. The proposed melting furnace would be charged with clean charge (i.e aluminum ingots, clean scrap).

### 26 Low-Pressure Die Casting Machines (SMOP No. 206-0040-X002)

Borbet would like add four additional low pressure die casting machines to existing Synthetic Minor Operating Permit No. 206-0040-X002. The low pressure casting machines would be charge with molten aluminum alloy via an electronic ladle. This process would be used to form automobile wheels.

### Emissions

Per the application, the expected emissions from the aluminum scrap processing line, aluminum melting furnace, and four low pressure casting machines would be PM, SO<sub>2</sub>, NO<sub>x</sub>, CO, and VOC. A summary of the facility's emissions are shown below:

Current facility wide PTE:

PM: 74.2 tons PM/yr  
VOC: 71 tons VOC/yr  
NO<sub>x</sub>: 38.1 tons NO<sub>x</sub>/yr  
CO: 84.4 tons CO/yr  
SO<sub>2</sub>: 15.9 tons SO<sub>2</sub>/yr  
HAPs: .745 tons total HAPs/yr

A summary of the PTE from the proposed aluminum scrap processing line, modification to Synthetic Minor Operating Permit No. 206-0040-X001 and modification to Synthetic Minor Operating Permit No. 206-0040-X002 is shown below:

	Uncontrolled Potential Emissions lb/hr (TPY)				
	Pollutants				
Emission Unit	SO <sub>2</sub>	NO <sub>x</sub>	CO	PM	VOC
Aluminum Scrap Processing Line (includes Thermal Dryer and Aluminum Melting Furnace)	2.4 (10.1)	3.98 (17.4)	1.65 (7.21)	6.18* (27.1)	1.84 (8.05)
Three Aluminum Reveratory Melting Furnace	3.25 (14.2)	5.71 (25)	1.78 (7.79)	7.47* (32.7)	.84 (3.68)
Thirty (30) Low Pressure Die Casting Machines	.124 (.543)	.062 (.271)	10.71 (46.9)	1.61E <sup>-2</sup> (.071)	.87 (3.43)
<b>Total Uncontrolled PTE</b>	<b>5.77 (25.3)</b>	<b>9.75 (42.7)</b>	<b>14.1 (61.9)</b>	<b>13.7 (59.9)</b>	<b>3.55 (15.5)</b>

Potential emissions for the aluminum scrap processing line were calculated using AP-42 emission factors and similar aluminum casting process operating 8,760 hours per year.

Potential emissions for the three reveratory melting furnaces were calculated using AP-42 emission factors based on 8,760 hours per year of operation and emission factors from similar operations.

Potential emissions for the low pressure die casting machines were calculated using emission factors obtained from Fire Database Version 6.22 SCC ID No. 3-04-001-14 and from similar facilities.

\*The allowable particulate matter emissions were calculated using the process weight equation found in ADEM Admin. Code r. 335-3-4-.04.

Summary of proposed aluminum processing line after proposed limits:

Emission Unit	SO <sub>2</sub>	NO <sub>x</sub>	CO	PM	VOC
Aluminum Scrap Processing Line (includes Thermal Dryer and Aluminum Melting Furnace)	2.4 (10.1)	3.98 (17.4 )	1.65 (7.21)	4.2* (18.4)	1.84 (8.05)

\*Borbet has requested to limit PM emissions from the proposed aluminum processing line to 0.4 lb/ton of material charged, equivalent to 4.2 TPY on 21,048 throughput.

SMOP No. 206-0040-X001 prior to modification:

	Pollutants				
Emission Unit	SO <sub>2</sub>	NO <sub>x</sub>	CO	PM	VOC
Six Aluminum Reveratory Melting Furnace	3.55 (15.5)	5.27 (23.1)	10.26 (44.9)	1.69 (7.43)	1.09 (4.32)

The potential emissions after the proposed modifications to SMOP No. 206-0040-X001:

	Pollutants				
Emission Unit	SO <sub>2</sub>	NO <sub>x</sub>	CO	PM	VOC
Three Aluminum Reveratory Melting Furnace	3.25 (14.2)	4.86 (21.3)	1.78 (7.79)	1.30* (5.70)	.84 (3.66)

Borbet request to retain the existing limit for PM emissions from the three aluminum furnace of 0.4 lb/ton of material charged, equivalent to 5.7 TPY on 28,592 TPY throughput.

SMOP No. 206-0040-X002 PTE prior to modification:

	Pollutants				
Emission Unit	SO <sub>2</sub>	NO <sub>x</sub>	CO	PM	VOC
Twenty - Six (26) Low Pressure Die Casting Machines	.08 (.349)	.289 (1.26)	6.8 (29.8)	1.4E <sup>-2</sup> (.06)	n/a

The potential emissions after the proposed modifications to SMOP No. 206-0040-X002:

	Pollutants				
Emission Unit	SO <sub>2</sub>	NO <sub>x</sub>	CO	PM	VOC
Thirty (30) Low Pressure Die Casting Machines	.125 (.548)	.362 (1.59)	11.1 (48.6)	1.6E <sup>-2</sup> (.071)	.882 (3.86)

Total facility-wide PTE after the proposed unit and modifications are shown below:

PM: 90.9 tons PM/yr  
VOC: 82.3 tons VOC/yr  
NO<sub>x</sub>: 54.1 tons NO<sub>x</sub>/yr  
CO: 73.3 tons CO/yr  
SO<sub>2</sub>: 24.9 tons SO<sub>2</sub>/yr  
HAPs: .745 tons total HAPs/yr

## Regulations

*Chapter 4 section .01* states that the visible emissions from the proposed aluminum processing unit shall not exceed 20% equivalent opacity as determined by a 6-minute average (*ADEM Admin Code r. 335-3-4-.01(1)(a)*), except during one 6 minute period in any 60-minute period the equivalent opacity may not exceed 40% (*ADEM Admin Code r. 335-3-4-.01(1)(b)*).

*Chapter 4 Section .03, Fuel Burning Equipment*, does not apply to the proposed aluminum melting furnace. The definition of *fuel burning equipment*, as stated in ADEM Admin. Code r. 335-3-1-.02(ee), pertains to indirect fired equipment. Therefore, since the proposed unit is a direct fired heater, the PM emissions limits outlined in ADEM Admin. r. Code 335-3-4-.03 does not apply.

*Chapter 5 Section .01* states that no person shall cause or permit the operation of a fuel burning installation in a Sulfur Dioxide Category II County in such a manner that sulfur oxides, measured as sulfur dioxide are emitted in excess of 4.0 pounds per million BTU heat input (*ADEM Admin Code r. 335-3-5-.01(b)*). However, since the proposed unit is a direct fired heater, *Chapter 5 section .01*, is not applicable.

### *112 (g):*

*ADEM Admin. Code r. 335-3-14-.06* applies to major sources of HAPs constructed after March 27, 1998. According to these regulations, a major source of HAPs is defined as one that has the potential to emit 10 TPY of any one HAP, or 25 TPY of any combination of HAPs. Air Permit application forms submitted by Borbet did not state that the above mentioned thresholds would be exceeded, nor does the Department expect any emission of HAPs in significant quantities. Therefore, no 112(g) review was deemed necessary.

### **NESHAP:**

The proposed aluminum processing line would be subject to *National Emission Standards for Hazardous Air Pollutants: Secondary Aluminum Production (40 CFR Part 63 Subpart RRR)*. §63.1500(c)(4) states that the requirements of this subpart pertaining to dioxin and furan (D/F) emissions and associated operating, monitoring, reporting, and recordkeeping requirements apply to *each new* and existing thermal chip dryer and *each new* and existing secondary aluminum processing unit, containing one or more group 1 furnace emission units *processing other than clean charge* located at a secondary aluminum production facility that is an area source of HAPs.

§63.1503 states that for the purpose of this subpart, aluminum die casting facilities, aluminum foundries, and aluminum extrusion facilities are not considered to be secondary aluminum production facilities if the only materials they melt are **clean charge**, customer returns, or internal scrap, and if they do not operate sweat furnaces, thermal chip dryers, or scrap dryers/delacquering kilns/decoating kilns. Therefore, since the proposed aluminum processing line would operate a thermal chip dryer and an aluminum melting furnace that would melt contaminated materials, which would not be considered **clean charge**, the facility would be considered an area source secondary aluminum production facility.

Borbet would be subject to the following *National Emission Standards for Hazardous Air Pollutants: Secondary Aluminum Production (40 CFR Part 63 Subpart RRR)* requirements for the proposed process:

### Thermal Chip Dryer

- §63.1501(c). Compliance Date.
- \*§63.1505(c)(2) Emissions Standard - 2.5 µg of Dioxin/Furan TEQ per Mg ( $3.5 \times 10^{-5}$  grain Dioxin/Furan TEQ per ton of feed)
- §63.1506(a). Operating requirements
- §63.1506(c). Capture/collection systems
- §63.1506(d)(1-2). Feed/charge weight
- §63.1506(f)(1-3). Thermal Chip Dryer
- §63.1506(p). Corrective action
- §63.1510(a)(b). Monitoring requirements - OM & M plan.
- §63.1510(d)(1-2). Capture/collection systems
- §63.1510(e)(1-2). Feed/charge weight
- §63.1510(g)(1-3). Afterburner
- §63.1510(k)(1-2). Thermal chip dryer
- §63.1511(a). Site-specific plan
- §63.1511(b)(1-5). Initial performance test
- §63.1511(c). Test Methods
- §63.1512(b). Thermal chip dryer
- §63.1512(k). Feed/charge weight measurement
- §63.1512(m). Afterburner
- §63.1513(b)(2) Equations for determining compliance
- §63.1515(a). Initial notifications
- §63.1515(b). Notification of compliance status report
- §63.1516(a). Startup, shutdown, and malfunction plan/reports
- §63.1516(b). Excess emissions/summary report
- §63.1516(c). Annual compliance certifications
- §63.1517(a) & (b). Records

### Aluminum Melting Furnace (Group 1)

- §63.1501(c). Compliance Date.
- \*§63.1505(c)(2) Emissions Standard – 2.5 µg of Dioxin/Furan TEQ per Mg ( $3.5 \times 10^{-5}$  grain Dioxin/Furan TEQ per ton of feed)
- §63.1506(a). Operating requirements
- §63.1506(c). Capture/collection systems
- §63.1506(d)(1-2). Feed/charge weight
- §63.1506(p). Corrective action
- §63.1510(a)(b). Monitoring requirements - OM & M plan.
- §63.1510(c). Labeling
- §63.1510(d)(1-2). Capture/collection systems
- §63.1510(e)(1-2). Feed/charge weight
- §63.1510(g)(1-3). Afterburner
- §63.1511(a). Site-specific plan
- §63.1511(b)(1-5). Initial performance test
- §63.1511(c). Test Methods
- §63.1512(k). Feed/charge weight measurement
- §63.1512(m). Afterburner
- §63.1512(o)(1-5). Flux injection rate
- §63.1512(r). Labeling
- §63.1512(s). Capture collection system

- §63.1515(a). Initial notifications
- §63.1515(b). Notification of compliance status report
- §63.1516(a). Startup, shutdown, and malfunction plan/reports
- §63.1516(b). Excess emissions/summary report
- §63.1516(c). Annual compliance certifications
- §63.1517(a) & (b). Records

\*On February 5, 2009 the Department discussed the dioxin/furan (D/F) emissions standard requirements for the proposed thermal chip dryer and group 1 aluminum melting furnace, whose emissions would be manifolded to a single control device (afterburner), with Daniel Garver, EPA Region IV. Mr. Garver stated that the combined emissions from all affected sources and emission units which are manifolded to a single emission control device must be tested at the outlet of the emission control device and that the D/F emissions are subject to the most stringent emissions standard of the proposed units. Therefore, since the most stringent emissions standard for the proposed units would be the group 1 aluminum melting furnace, the owner or operator of the proposed process must not discharge or cause to be discharged to the atmosphere emissions in excess of 2.5 µg of Dioxin/Furan TEQ per Mg ( $3.5 \times 10^{-5}$  grain Dioxin/Furan TEQ per ton of feed).

#### Aluminum Melting Furnace

Borbet currently melts, holds, and processes clean charge in their existing furnaces. The facility adds “cover flux” to the surface of the molten aluminum in the existing furnaces and no agitation is performed and no HAPs are emitted. Since no agitation is performed and no HAPs are emitted from the “cover flux”, the facility’s flux is considered nonreactive. The definition of a group 2 furnace, as stated in §63.15003, is any furnace of any design that melts, holds, or processes only clean charge and that performs no fluxing or performs fluxing using only nonreactive, non-Hap-containing/non-HAP-generating gases or agents. §63.1500(b)(4) states requirements of this subpart apply to each new and existing group 2 furnace located at a secondary aluminum production facility that is a major source of HAPs. Therefore, since Borbet would melt clean charge with no reactive fluxing in the proposed aluminum melting furnace and the facility is considered an area source secondary aluminum production facility, requirements for group 2 furnaces would not apply.

#### **SMOP/Title V/PSD:**

Borbet is classified as a secondary metals production plant. To avoid Major Source status for Title V and PSD, Borbet has requested to limit PM emissions from both the three aluminum furnaces and the proposed aluminum processing line to 0.4 lb/ton, equivalent to 5.7 TPY on 28,592 TPY throughput and 4.2 TPY on 21,048 throughput, respectively. This limits facility wide PM emission to 90.9 TPY, which is below 100 TPY to avoid major source status for Title V and PSD. According to submitted applications, no other criteria pollutants are expected to exceed major source thresholds. In addition, potential emissions from Borbet are not expected to exceed major source thresholds of 10 or more TPY of any single HAP or 25 or more TPY of any combination of HAPs.

#### **NSPS:**

The proposed unit would not be subject to any federal *New Source Performance Standards*

#### **AIR TOXICS PROGRAM:**

Air permit application forms submitted to the Department by Borbet do not indicate that a significant amount of Air Toxics would be emitted from the proposed process, nor does the Department expect any

Air Toxics emissions of significant quantities to be emitted. Therefore, no *Air Toxics* Review was performed for this project.


**CLASS I AREA:**

Emissions from these units are not expected to impact the closest *Class I Area*, the Sipsey Wilderness, which is more than 100 km from the plant site.

**Recommendations:**

Based on above and pending the outcome of the 15-day public comment period I recommend that Synthetic Minor Operating Permit No. 206-0040-X001 and Synthetic Minor Operating Permit 206-0040-X002 be modified and Synthetic Minor Operating Permit No. 206-0040-X011 be issued as indicated below pending receipt of the permitting fees. The recommended provisos are attached.

<u>Permit No.</u>	<u>Permit Description</u>
206-0040-X001	Three (3) Aluminum Reverbatory Melting Furnaces
206-0040-X002	Thirty (30) Low-Pressure Die Casting Machines
206-0040-X011	Aluminum Processing Line (Metal Shredder, Centrifuge, Thermal Chip Dryer, and Aluminum Melting Furnace w/ Afterburner)

  
Christopher Osborne  
Industrial Minerals Section  
Air Division

***MARCH 17, 2009***

Date



## EMISSIONS CALCULATIONS

The allowable particulate matter emissions were calculated using the process weight equation found in ADEM Admin. Code r. 335-3-4-.04.

$$E = 3.59P^{0.62}$$

where: E = Emissions in pounds per hour

P = Process weight per hour in tons per hour

### Maximum Allowable PM emissions:

Maximum process capacity for **aluminum production line** = 4,805 lb/hr

3.59	$2.4^{(0.62)}$	=	<b>6.18 lbs</b>
			<b>hr</b>

<b>6.18 lbs</b>	8,760 hr	ton	=	<b>27.1 tons</b>
<b>hr</b>	yr	2,000 lbs		<b>yr</b>

### Aluminum Production Line

#### Hi –Tec 4500 Group 1 Furnace:

**Maximum Uncontrolled Criteria Pollutants Potential Emissions for combustion of natural gas in the proposed 20 MMBtu/hr Furnace (factors obtained from AP-42 tables 1.4-1 and 1.4-2):**

20 MMBtu	Scf	100 lb NO <sub>x</sub>	=	<b>1.96 lb NO<sub>x</sub></b>
hr	1,020 Btu	10 <sup>6</sup> scf		<b>hr</b>

20 MMBtu	Scf	84 lb CO	=	<b>1.65 lb CO</b>
hr	1,020 Btu	10 <sup>6</sup> scf		<b>hr</b>

20 MMBtu	Scf	.6 lb SO <sub>2</sub>	=	<b>.012 lb SO<sub>2</sub></b>
hr	1,020 Btu	10 <sup>6</sup> scf		<b>hr</b>

20 MMBtu	Scf	5.5 lb VOC	=	<b>.108 lb VOC</b>
hr	1,020 Btu	10 <sup>6</sup> scf		<b>hr</b>

20 MMBtu	Scf	7.6 lb PM	=	<b>.149 lb PM</b>
hr	1,020 Btu	10 <sup>6</sup> scf		<b>hr</b>

**Maximum Uncontrolled Criteria Pollutants Potential Emissions for the proposed 20 MMBtu/hr Furnace (factors obtained from similar melting operations):**

SO <sub>2</sub>	NO <sub>x</sub>	CO	VOC	PM
.851 lb/hr	2.02 lb/hr	-----	1.73 lb/hr	1.19 lb/hr

The combined resulting factor for each criteria pollutant was used to project maximum potential emissions for the proposed 20MM BTU/hr Furnace.

Annual Hours	8760	SO <sub>2</sub>	NO <sub>x</sub>	CO	PM	VOC
	(lb/hr)	3.25	4.86	1.78	6.18	1.84
	<b>TPY</b>	<b>14.2</b>	<b>21.3</b>	<b>7.78</b>	<b>27.1</b>	<b>8.1</b>

Three (3) Aluminum Melting Furnaces

The allowable particulate matter emissions were calculated using the process weight equation found in ADEM Admin. Code r. 335-3-4-.04.

$$E = 3.59P^{0.62}$$

where: E = Emissions in pounds per hour

P = Process weight per hour in tons per hour

**Maximum Allowable PM emissions:**

Maximum process capacity for **three aluminum melting furnaces** = 6,528 lb/yr

3.59	3.26 <sup>(0.62)</sup>	=	<b>7.47 lbs</b>
			<b>hr</b>

<b>7.47 lbs</b>	8,760 hr	ton	=	<b>32.7 tons</b>
<b>hr</b>	yr	2,000 lbs		<b>yr</b>

**Hi -Tec 1500 Furnace:**

**Maximum Uncontrolled Criteria Pollutants Potential Emissions for combustion of natural gas in the proposed 2.77 MMBtu/hr Furnace (factors obtained from AP-42 tables 1.4-1 and 1.4-2):**

2.77 MMBtu	Scf	100 lb NO <sub>x</sub>	=	<b>.272 lb NO<sub>x</sub></b>
hr	1,020 Btu	10 <sup>6</sup> scf		<b>hr</b>

2.77 MMBtu	Scf	84 lb CO	=	<b>.228 lb CO</b>
hr	1,020 Btu	10 <sup>6</sup> scf		<b>hr</b>

2.77 MMBtu	Scf	.6 lb SO <sub>2</sub>	=	<b>1.63E<sup>-3</sup> lb SO<sub>2</sub></b>
hr	1,020 Btu	10 <sup>6</sup> scf		<b>hr</b>

2.77 MMBtu	Scf	5.5 lb VOC	=	<b>.015 lb VOC</b>
hr	1,020 Btu	10 <sup>6</sup> scf		<b>hr</b>

2.77 MMBtu	Scf	7.6 lb PM	=	<b>.021 lb PM</b>
hr	1,020 Btu	10 <sup>6</sup> scf		<b>hr</b>

**Hi –Tec 3500 Furnace:**

**Maximum Uncontrolled Criteria Pollutants Potential Emissions for combustion of natural gas in the proposed 16.00 MMBtu/hr Furnace (factors obtained from AP-42 tables 1.4-1 and 1.4-2):**

16 MMBtu	Scf	100 lb NO <sub>x</sub>	=	<b>1.57 lb NO<sub>x</sub></b>
hr	1,020 Btu	10 <sup>6</sup> scf		<b>hr</b>

16 MMBtu	Scf	84 lb CO	=	<b>1.32 lb CO</b>
hr	1,020 Btu	10 <sup>6</sup> scf		<b>hr</b>

16 MMBtu	Scf	.6 lb SO <sub>2</sub>	=	<b>9.41E<sup>-3</sup> lb SO<sub>2</sub></b>
hr	1,020 Btu	10 <sup>6</sup> scf		<b>hr</b>

16 MMBtu	Scf	5.5 lb VOC	=	<b>.086 lb VOC</b>
hr	1,020 Btu	10 <sup>6</sup> scf		<b>hr</b>

16 MMBtu	Scf	7.6 lb PM	=	<b>.119 lb PM</b>
hr	1,020 Btu	10 <sup>6</sup> scf		<b>hr</b>

**Maximum Uncontrolled Criteria Pollutants Potential Emissions for the Three Aluminum Melting Furnaces (factors obtained from similar melting operations):**

SO <sub>2</sub>	NO <sub>x</sub>	CO	VOC	PM
3.25 lb/hr	2.78 lb/hr	-----	.72 lb/hr	1.44 lb/hr

The combined resulting factor for each criteria pollutant was used to project maximum potential emissions for the proposed Three Aluminum Melting Furnaces.

Annual Hours	8760	SO <sub>2</sub>	NO <sub>x</sub>	CO	PM	VOC
	(lb/hr)	3.25	3.98	1.65	7.47	.84
	<b>TPY</b>	<b>14.2</b>	<b>17.4</b>	<b>7.21</b>	<b>32.7</b>	<b>3.68</b>

**Low Pressure Die Casting Machine:**

**Maximum Uncontrolled Criteria Pollutants Potential Emissions for combustion of natural gas in the proposed 16.00 MMBtu/hr Furnace (factors obtained from AP-42 tables 1.4-1 and 1.4-2):**

.7 MMBtu	Scf	100 lb NO <sub>x</sub>	=	<b>1.57 lb NO<sub>x</sub></b>
hr	1,020 Btu	10 <sup>6</sup> scf		<b>hr</b>

.7 MMBtu	Scf	84 lb CO	=	<b>1.32 lb CO</b>
hr	1,020 Btu	10 <sup>6</sup> scf		<b>hr</b>

.7 MMBtu	Scf	.6 lb SO <sub>2</sub>	=	<b>9.41E<sup>-3</sup> lb SO<sub>2</sub></b>
hr	1,020 Btu	10 <sup>6</sup> scf		<b>hr</b>

.7 MMBtu	Scf	5.5 lb VOC	=	<b>.086 lb VOC</b>
hr	1,020 Btu	10 <sup>6</sup> scf		<b>hr</b>

.7 MMBtu	Scf	7.6 lb PM	=	<b>.119 lb PM</b>
hr	1,020 Btu	10 <sup>6</sup> scf		<b>hr</b>

**Maximum Uncontrolled Criteria Pollutants Potential Emissions for the Thirty Aluminum Die Casting Machines (factors obtained from similar melting operations):**

SO <sub>2</sub>	NO <sub>x</sub>	CO	VOC	PM
.124 lb/hr	.062 lb/hr	10.53 lb/hr	.87 lb/hr	0.0 lb/hr

The combined resulting factor for each criteria pollutant was used to project maximum potential emissions for the proposed Thirty Aluminum Die Casting Machines.

Annual Hours	8760	SO <sub>2</sub>	NO <sub>x</sub>	CO	PM	VOC
	(lb/hr)	.125	.362	11.1	1.6E <sup>-2</sup>	.882
	<b>TPY</b>	<b>.548</b>	<b>1.59</b>	<b>48.6</b>	<b>.07</b>	<b>3.86</b>

**Allowable Emissions based on requested limits:**

Emissions of PM from the Aluminum Processing Line:

.4 lb PM	21,048 ton	=	<b>8,419 lb PM</b>
ton	yr		<b>yr</b>

8,419 lb	tons	=	<b>4.21 tons</b>
yr	2000 lb		<b>yr</b>

Emissions of PM from the three aluminum melting furnaces:

.4 lb PM	28,592 ton	=	<b>11,437 lb PM</b>
ton	yr		<b>yr</b>

11,437 lb	tons	=	<b>5.72 tons</b>
yr	2000 lb		<b>yr</b>

**Borbet Alabama, Inc.**  
**Auburn, Alabama**  
**(Permit No.: 206-0040-X011)**  
**Provisos**

1. This permit is issued on the basis of Rules and Regulations existing on the date of issuance. In the event additional Rules and Regulations are adopted, it shall be the permit holder's responsibility to comply with such rules.
2. This permit is not transferable. Upon sale or legal transfer, the new owner or operator must apply for a permit within 30 days.
3. A new permit application must be made for new sources, replacements, alterations or design changes which may result in the issuance of, or an increase in the issuance of, air contaminants, or the use of which may eliminate or reduce or control the issuance of air contaminants.
4. Each point of emission will be provided with sampling ports, ladders, platforms, and other safety equipment to facilitate testing performed in accordance with procedures established by Part 60 of Title 40 of the Code of Federal Regulations, as the same may be amended or revised.
5. In case of shutdown of air pollution control equipment for scheduled maintenance for a period greater than two **(2) hours**, the intent to shut down shall be reported to the Air Division at least 24 hours prior to the planned shutdown, **unless accompanied by the immediate shutdown of the emission source.**
6. In the event there is a breakdown of equipment in such a manner as to cause increased emission of air contaminants for a period greater than two **(2) hours**, the person responsible for such equipment shall notify the Air Division within an additional 24 hours and provide a statement giving all pertinent facts, including the duration of the breakdown. The Air Division shall be notified when the breakdown has been corrected.
7. This process including all air pollution control devices and capture systems for which this permit is issued shall be maintained and operated at all times in a manner so as to minimize the emissions of air contaminants. Procedures for ensuring that the above equipment is properly operated and maintained so as to minimize the emission of air contaminants shall be established.
8. This permit expires and the application is cancelled if construction has not begun within 24 months of the date of issuance of the permit.
9. On completion of construction of the device(s) for which this permit is issued, written notification of the fact is to be submitted to the Chief of the Air Division. The notification shall indicate whether the device(s) was constructed as proposed in the application. The device(s) shall not be operated until authorization to operate is granted by the Chief of the Air Division. Failure to notify the Chief of the Air Division of completion of construction and/or operation without authorization could result in revocation of this permit.
10. Submittal of other reports regarding monitoring records, fuel analyses, operating rates, and equipment malfunctions may be required as authorized in the Department's air pollution control rules and regulations. The Department may require stack emission testing at any time.

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11. Additions and revisions to the conditions of this Permit will be made, if necessary, to ensure that the Department's air pollution control rules and regulations are not violated.
  12. Nothing in this permit or conditions thereto shall negate any authority granted to the Air Division pursuant to the Alabama Environmental Management Act or regulations issued there under.
  13. This permit is issued with the condition that, should obnoxious odors arising from the plant operations be verified by Air Division inspectors, measures to abate the odorous emissions shall be taken upon a determination by the Alabama Department of Environmental Management that these measures are technically and economically feasible.
  14. Precautions shall be taken to prevent fugitive dust emanating from plant roads, grounds, stockpiles, screens, dryers, hoppers, ductwork, etc.
  15. Plant or haul roads and grounds will be maintained in the following manner so that dust will not become airborne. A minimum of one, or a combination, of the following methods shall be utilized to minimize airborne dust from plant or haul roads and grounds:
    - (a) by the application of water any time the surface of the road is sufficiently dry to allow the creation of dust emissions by the act of wind or vehicular traffic;
    - (b) by reducing the speed of vehicular traffic to a point below that at which dust emissions are created;
    - (c) by paving;
    - (d) by the application of binders to the road surface at any time the road surface is found to allow the creation of dust emissions;
- Should one, or a combination, of the above methods fail to adequately reduce airborne dust from plant or haul roads and grounds, alternative methods shall be employed, either exclusively or in combination with one or all of the above control techniques, so that dust will not become airborne. Alternative methods shall be approved by the Department prior to utilization.
16. The permittee shall not use as a defense in an enforcement action that maintaining compliance with conditions of this permit would have required halting or reducing the permitted activity.
  17. The issuance of this permit does not convey any property rights of any sort, or any exclusive privilege.
  18. This unit is subject to visible emission restrictions for stationary sources as stated in ADEM Administrative Code r. 335-3-4-.01(1) (a – b). Compliance with opacity standards in the Rule shall be determined by conducting observations in accordance with 40 CFR Part 60 Reference Method 9.
  19. The PM emissions from the Aluminum Scrap Processing Line shall not exceed 0.4 lbs/ton of material throughput measured in accordance with EPA Reference Method 5 as found in Appendix A of 40 CFR Part 60.

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20. This process is subject to the National Emission Standards for Hazardous Air Pollutants for area sources as found in 40 CFR 63, Subpart RRR.
21. The owner or operator of a thermal chip dryer and Group 1 furnace at a secondary aluminum production facility that is a major or area source whose emissions are manifolded to a single control device must not discharge or cause to be discharged to the atmosphere emissions in excess 2.5 µg of Dioxin/Furan (D/F) TEQ per Mg ( $3.5 \times 10^{-5}$  grain Dioxin/Furan TEQ per ton of feed).
22. The owner or operator of these units are subject to 40 CFR §63.1506 Operating Requirements (a), (b), (c), (d), (f), and (p).
23. §63.1506 (b) Labeling. The owner or operator must provide and maintain easily visible labels posted at each group 1 furnace that identifies the applicable emission limits and means of compliance, including:
  - 1) The type of affected sources or emission unit (*e.g.*, group 1 furnace).
  - 2) The applicable operational standard(s) and control method(s). This includes, but is not limited to, the type of charge to be used for the furnace, flux materials and the applicable operating parameter ranges and requirements as incorporated in the OM&M plan.
24. §63.1506 (c) Capture/collection systems. For each affected emission unit equipped with an add-on air pollution control device, the owner or operator must:
  - 1) Design and install a system for the capture and collection of emissions to meet engineering standard for minimum exhaust rates as published by the American Conference of Governmental Industrial Hygienists in chapters 3 and 5 of “Industrial Ventilation: A Manual of Recommended Practice”
  - 2) Vent captured emissions through a closed system, and
  - 3) Operate each capture/collection system according to the procedures and requirements in the OM&M plan.
25. §63.1506 (d) Feed/charge weight. The owner or operator of these units subject to an emission limit in kg/Mg (lb/ton) or µg/Mg (gr/ton) of feed/charge must:
  - 1) Install and operated a device or develop a procedure that measures and records or otherwise determine the weight of feed/charge or each operating cycle or time period used in the performance test; and
  - 2) Operate each weight measurement system or other weight determination procedure in accordance with the OM&M plan.
  - 3) The owner or operator may chose to measure and record aluminum production weight from an affected source or emission unit rather than feed/charge weight to an affected source or emission unit, provided that the aluminum production weight is measured and recorded for all emission units with a SAPU and all calculations to demonstrate compliance with the emission limits for SAPUs are based on aluminum production weight rather than feed/charge weight.



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26. §63.1506 (f) Thermal chip dryer. The owner or operator of a thermal chip dryer with emissions controlled by an afterburner must:
- 1) Maintain the 3-hour block average operating temperature of each afterburner at or above the average temperature established during the performance test.
  - 2) Operate each afterburner in accordance with the OM&M plan.
  - 3) Operate each thermal chip dryer using only unpainted aluminum chips as feedstock.
27. §63.1506 (p) Corrective action. The owner or operator must initiate corrective action when a process parameter or add-on control device operating parameter deviated from the value or range established during the performance test and incorporated in the OM&M. Corrective action must restore operating of the affected source or emission unit (including the process or control device) to its normal or usual mode of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions. Corrective actions taken must include follow-up actions necessary to return the process or control device parameter level(s) to the value or range of values established during the performance test and steps to prevent likely recurrence of the cause of a deviation.
28. The owner or operator of these units are subject to 40 CFR §63.1510 Monitoring Requirements (b), (c), (d), (e), (g), (j), and (k).
29. §63.1510 (b) Operation, maintenance, and monitoring (OM&M) plan. The owner or operator must prepare and implement for these units, a written operation, maintenance, and monitoring (OM&M) plan. The owner or operator of any new affected source must submit the OM&M plan to the responsible permitting authority within 90 days after a successful initial performance test under §63.1511(b), or within 90 days after the compliance date established by §63.1501(b) if no initial performance test is required. The plan must be accompanied by a written certification by the owner or operator that the OM&M plan satisfies all requirements of this section and is otherwise consistent with the requirements of this subpart. The owner or operator must comply with all of the provisions of the OM&M plan as submitted to the permitting authority, unless and until the plan is revised in accordance with the following procedures. If the permitting authority determines at any time after receipt of the OM&M plan that any revisions of the plan are necessary to satisfy the requirements of this section or this subpart, the owner or operator must promptly make all necessary revisions and resubmit the revised plan. If the owner or operator determines that any other revisions of the OM&M plan are necessary, such revisions will not become effective until the owner or operator submits a description of the changes and a revised plan incorporating them to the permitting authority. Each plan must contain the following information:
- 1) Process and control device parameters to be monitored to determine compliance, along with established operating levels or ranges, as applicable, for each process and control device.
  - 2) A monitoring schedule for each affected source and emission unit.
  - 3) Procedures for the proper operation and maintenance of each process unit and add-on control device used to meet the applicable emission limits or standards in 40 CFR §63.1505.

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- 4) Procedures for the proper operation and maintenance of monitoring devices or systems used to determine compliance, including:
    - a. Calibration and certification of accuracy of each monitoring device, at least once every 6 months, according to the manufacturer's instructions; and
    - b. Procedures for the quality control and quality assurance of continuous emission or opacity monitoring systems (if applicable) as required by the general provisions in subpart A of this part.
  - 5) Procedures for monitoring process and control device parameters, including procedures for annual inspections of afterburners, and if applicable, the procedure to be used for determining charge/feed (or throughput) weight if a measurement device is not used.
  - 6) Corrective actions to be taken when process or operating parameters or add-on control device parameters deviate from the value or range established in Proviso 29(1), including:
    - a. Procedures to determine and record the cause of any deviation or excursion, and the time the deviation or excursion began and ended; and
    - b. Procedures for recording the corrective action taken, the time corrective action was initiated, and the time/date corrective action was completed.
  - 7) A maintenance schedule for these units that is consistent with the manufacturer's instructions and recommendations for routine and long-term maintenance.
30. §63.1510 (c) Labeling. The owner or operator must inspect the labels of the group 1 furnace at least once per calendar month to confirm that posted labels as required by the operational standard in §63.1506(b) are intact and legible.
31. §63.1510 (d) Capture/Collection system. The owner or operator must:
- 1) Install, operate, and maintain a capture/collection system for each emission unit equipped with an add-on air pollution control device; and
  - 2) Inspect each capture/collection and closed vent system at least once each calendar year to ensure that each system is operating in accordance with the operating requirements in §63.1506(c) and record the results of each inspection.
32. §63.1510 (e) Feed/charge weight. The owner or operator of these units must install, calibrate, operate, and maintain a device to measure and record the total weight of feed/charge to, or the aluminum production from, the affected source or emission unit over the same operating cycle or time period used in the performance test. As an alternative to a measurement device, the owner or operator may use a procedure acceptable to the applicable permitting authority to determine the total weight of feed/charge or aluminum production to the affected source or emission unit.
- 1) The accuracy of the weight measurement device or procedure must be  $\pm 1$  percent of the weight being measured. The owner or operator may apply to the permitting agency for approval to use a device of alternative accuracy if the required accuracy cannot be achieved as a result of

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equipment layout or charging practices. A device of alternative accuracy will not be approved unless the owner or operator provides assurance through data and information that the affected source will meet the relevant emission standard.

- 2) The owner or operator must verify the calibration of the weight measurement device in accordance with the schedule specified by the manufacturer, or if no calibration schedule is specified, at least once every 6 months.
33. §63.1510 (g) Afterburner. The following requirements apply to the owner or operator of the emission unit using an afterburner to comply with the National Emission Standards for Hazardous Air Pollutants as found in 40 CFR 63, Subpart RRR.
- 1) The owner or operator must install, calibrate, maintain, and operate a device to continuously monitor and record the operating temperature of the afterburner consistent with the requirements for continuous monitoring systems in subpart A of National Emission Standards for Hazardous Air Pollutants as found in 40 CFR 63, Subpart RRR.
  - 2) The temperature monitoring device must meet each of these performance and equipment specifications:
    - a. The temperature monitoring device must be installed at the exit of the combustion zone of each afterburner.
    - b. The monitoring system must record the temperature in 15-minute block averages and determine and record the average temperature for each 3-hour block period.
    - c. The recorder response range must include zero and 1.5 times the average temperature established according to the requirements in §63.1512(m).
    - d. The reference method must be a National Institute of Standards and Technology calibrated reference thermocouple-potentiometer system.
  - 3) The owner or operator must conduct an inspection of the afterburner at least once a year and record the results. At a minimum, an inspection must include:
    - a. Inspection of all burners, pilot assemblies, and pilot sensing devices for proper operation and clean pilot sensor;
    - b. Inspection for proper adjustment of combustion air;
    - c. Inspection of internal structures ( *e.g.*, baffles) to ensure structural integrity;
    - d. Inspection of dampers, fans, and blowers for proper operation;
    - e. Inspection for proper sealing;
    - f. Inspection of motors for proper operation;

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- g. Inspection of combustion chamber refractory lining and clean and replace lining as necessary;
  - h. Inspection of afterburner shell for corrosion and/or hot spots;
  - i. Documentation, for the burn cycle that follows the inspection, that the afterburner is operating properly and any necessary adjustments have been made; and
  - j. Verification that the equipment is maintained in good operating condition.
  - k. Following an equipment inspection, all necessary repairs must be completed in accordance with the requirements of the OM&M plan.
34. §63.1510 (j) The total reactive flux injection rate. These requirements apply to the owner or operator of the group 1 furnace. The owner or operator must:
- 1) Install, calibrate, operate, and maintain a device to continuously measure and record the weight of gaseous or liquid reactive flux injected to each affected source or emission unit (if applicable):
    - a. The monitoring system must record the weight for each 15-minute block period, during which reactive fluxing occurs, over the same operating cycle or time period used in the performance test.
    - b. The accuracy of the weight measurement device must be  $\pm 1$  percent of the weight of the reactive component of the flux being measured. The owner or operator may apply to the Department for permission to use a weight measurement device of alternative accuracy in cases where the reactive flux flow rates are so low as to make the use of a weight measurement device of  $\pm 1$  percent impracticable. A device of alternative accuracy will not be approved unless the owner or operator provides assurance through data and information that the affected source will meet the relevant emission standards.
    - c. The owner or operator must verify the calibration of the weight measurement device in accordance with the schedule specified by the manufacturer, or if no calibration schedule is specified, at least once every 6 months.
  - 2) Calculate and record the gaseous or liquid reactive flux injection rate (kg/Mg or lb/ton) for each operating cycle or time period used in the performance test using the procedure in §63.1512(o).
  - 3) Record, for each 15-minute block period during each operating cycle or time period used in the performance test during which reactive fluxing occurs, the time, weight, and type of flux for each addition of:
    - a. Gaseous or liquid reactive flux other than chlorine; and
    - b. Solid reactive flux.
  - 4) Calculate and record the total reactive flux injection rate for each operating cycle or time period used in the performance test using the procedure in 40 CFR §63.1512(o).

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- 5) The owner or operator of the group 1 furnace performing reactive fluxing may apply to the Department for approval of an alternative method for monitoring and recording the total reactive flux addition rate based on monitoring the weight or quantity of reactive flux per ton of feed/charge for each operating cycle or time period used in the performance test. An alternative monitoring method will not be approved unless the owner or operator provides assurance through data and information that the affected source will meet the relevant emission standards on a continuous basis.
35. §63.1510 (k) Thermal chip dryer. These requirements apply to the owner or operator of the thermal chip dryer with emissions controlled by an afterburner. The owner or operator must:
- 1) Record the type of materials charged to the unit for each operating cycle or time period used in the performance test.
  - 2) Submit a certification of compliance with the applicable operational standard for charge materials in §63.1506(f)(3) for each 6-month reporting period. Each certification must contain the information in §63.1516(b)(2)(i).
36. The owner or operator of these units are subject to 40 CFR §63.1511 Performance Test/Compliance Demonstration Requirements (b) and (c).
37. § 63.1511 b) *Initial performance test*. Following approval of the site-specific test plan, the owner or operator must demonstrate initial compliance with each applicable emission, equipment, work practice, or operational standard for each affected source and emission unit, and report the results in the notification of compliance status report as described in §63.1515(b). The owner or operator of any new affected source for which an initial performance test is required must conduct this initial performance test within 90 days after the date for compliance established by §63.1501(b). Except for the date by which the performance test must be conducted, the owner or operator must conduct each performance test in accordance with the requirements and procedures set forth in §63.7(c). Owners or operators of affected sources located at facilities which are area sources are subject only to those performance testing requirements pertaining to D/F.
- 1) The owner or operator must conduct each test while the affected source or emission unit is operating at the highest production level with charge materials representative of the range of materials processed by the unit and, if applicable, at the highest reactive fluxing rate.
  - 2) Each performance test for a continuous process must consist of 3 separate runs; pollutant sampling for each run must be conducted for the time period specified in the applicable method or, in the absence of a specific time period in the test method, for a minimum of 3 hours.
  - 3) Each performance test for a batch process must consist of three separate runs; pollutant sampling for each run must be conducted over the entire process operating cycle.
  - 4) Where multiple affected sources or emission units are exhausted through a common stack, pollutant sampling for each run must be conducted over a period of time during which all affected sources or emission units complete at least 1 entire process operating cycle or for 24 hours, whichever is shorter.

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- 5) Initial compliance with an applicable emission limit or standard is demonstrated if the average of three runs conducted during the performance test is less than or equal to the applicable emission limit or standard.
38. § 63.1511 (c) Test methods. The owner or operator must use the following method in appendix A to 40 CFR part 60 to determine compliance with the emission limit:
  - 1) Method 23 for the concentration of D/F.
39. The owner or operator of these units are subject to 40 CFR §63.1512 Performance Test/Compliance Demonstration Requirements and Procedures (b), (k), (m), (o), (r), and (s).
40. §63.1512 (b) Thermal chip dryer. The owner or operator must conduct a performance test to measure D/F emissions at the outlet of the control device while the unit processes only unpainted aluminum chips.
41. §63.1512 (k) Feed/charge weight measurement. During the emission test(s) conducted to determine compliance with emission limits in a kg/Mg (lb/ton) format, the owner or operator of these units, subject to an emission limit in a kg/Mg (lb/ton) of feed/charge format, must measure (or otherwise determine) and record the total weight of feed/charge to the affected source or emission unit for each of the three test runs and calculate and record the total weight. An owner or operator that chooses to demonstrate compliance on the basis of the aluminum production weight must measure the weight of aluminum produced by the emission unit or affected source instead of the feed/charge weight.
42. §63.1512 (m) Afterburner. These requirements apply to the owner or operator of an affected source using an afterburner to comply with 40 CFR §63.1512 Performance Test/Compliance Demonstration Requirements and Procedures.
  - 1) Prior to the initial performance test, the owner or operator must conduct a performance evaluation for the temperature monitoring device according to the requirements of §63.8.
  - 2) The owner or operator must use these procedures to establish an operating parameter value or range for the afterburner operating temperature.
    - a. Continuously measure and record the operating temperature of each afterburner every 15 minutes during the D/F performance tests;
    - b. Determine and record the 15-minute block average temperatures for the three test runs; and,
    - c. Determine and record the 3-hour block average of the recorded temperature measurements for the 3 test runs.
43. §63.1512 (o) Flux injection rate. The owner or operator must use these procedures to establish an operating parameter value or range for the total reactive chlorine flux injection rate.
  - 1) Continuously measure and record the weight of gaseous or liquid reactive flux injected for each 15 minute period during the D/F test, determine and record the 15-minute block average weights,

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and calculate and record the total weight of the gaseous or liquid reactive flux for the 3 test runs (if applicable) or;

- 2) Record the identity, composition, and total weight of each addition of solid reactive flux for the 3 test runs;
- 3) Determine the total reactive chlorine flux injection rate by adding the recorded measurement of the total weight of chlorine in the gaseous or liquid reactive flux injected and the total weight of chlorine in the solid reactive flux using Equation 5:

$$W_t = F_1W_1 + F_2W_2 \quad (\text{Eq. 5})$$

Where,

$W_t$ = Total chlorine usage, by weight;

$F_1$ = Fraction of gaseous or liquid flux that is chlorine;

$W_1$ = Weight of reactive flux gas injected;

$F_2$ = Fraction of solid reactive chloride flux that is chlorine ( *e.g.*,  $F = 0.75$  for magnesium chloride; and

$W_2$ = Weight of solid reactive flux;

- 4) Divide the weight of total chlorine usage ( $W_t$ ) for the 3 test runs by the recorded measurement of the total weight of feed for the 3 test runs; and
  - 5) If a solid reactive flux other than magnesium chloride is used, the owner or operator must derive the appropriate proportion factor subject to approval by the Department.
44. §63.1512 (r) Labeling. The owner or operator of the group 1 furnace must submit the information described in Proviso 50(3) (§63.1515(b)(3)) as part of the notification of the compliance status report to document conformance with the operational standard in Proviso 23 (§63.1506(b)).
45. §63.1512 (s) Capture/collection system. The owner or operator of a new emission unit with an add-on control device (afterburner) must submit the information described in Proviso 50(2) (§63.1515(b)(2)) as part of the notification of compliance status report to document conformance with the operational standard in Proviso 24 (§63.1506(c)).
46. The owner or operator of these units are subject to 40 CFR §63.1513 Equations for Determining Compliance (b).
47. §63.1513 (b) D/F emission limits. The owner or operator must use the following equation to determine compliance with an emission limit for D/F:

$$E = \frac{C \times Q}{P} \quad (\text{Eq. 7A})$$

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Where:

E = Emission rate of D/F,  $\mu\text{g}/\text{Mg}$  (gr/ton) of feed;

C = Concentration of D/F,  $\mu\text{g}/\text{dscm}$  (gr/dscf);

Q = Volumetric flow rate of exhaust gases, dscm/hr (dscf/hr); and

P = Production rate, Mg/hr (ton/hr).

48. The owner or operator of these units are subject to 40 CFR §63.1515 Notifications (a) and (b).
49. §63.1515 (a) Initial notifications. The owner or operator must submit initial notifications to the Department as described below:
- 1) After the effective date (March 23, 2000), the owner or operator who intends to construct a new affected source or reconstruct an affected source subject to 40 CFR 63, Subpart RRR, or reconstruct a source such that it becomes an affected source subject to 40 CFR 63, Subpart RRR, must provide notification of the intended construction or reconstructions. The notification must include all the information required for an application for approval of construction or reconstruction as required by 40 CFR §63.5(d).
    - a. The application must be submitted as soon as practicable before the construction or reconstruction is planned to commence (but no sooner than the effective date) if the construction or reconstruction commences after the effective date of 40 CFR 63, Subpart RRR; or
    - b. The application must be submitted as soon as practicable before startup but no later than 90 days after the effective date of this subpart if the construction or reconstruction had commenced and initial startup had not occurred before the effective date.
  - 2) As required by 40 CFR §63.9(d), the owner or operator must provide notification of any special compliance obligations for a new source.
  - 3) As required by 40 CFR §63.9(e) and (f), the owner or operator must provide notification of the anticipated date for conducting performance tests and visible emission observations. The owner or operator must notify the Administrator of the intent to conduct a performance test at least 60 days before the performance test is scheduled; notification of opacity or visible emission observations for a performance test must be provided at least 30 days before the observations are scheduled to take place.
50. §63.1515 (b) Notification of Compliance Status Report. Each owner or operator of an existing affected source must submit a notification of compliance status report within 60 days after the compliance date established by §63.1501(a). Each owner or operator of a new affected source must submit a notification of compliance status report within 90 days after conducting the initial performance test required by §63.1511(b), or within 90 days after the compliance date established by §63.1501(b) if no initial performance test is required. The notification must be signed by the responsible official who must certify its accuracy. The required information may be submitted in an operating permit application, in an amendment to an operating permit application, in a separate



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submittal, or in any combination. If an owner or operator submits the information specified in this section at different times or in different submittals, later submittals may refer to earlier submittals instead of duplicating and resubmitting the information previously submitted. A complete notification of compliance status report must include:

- 1) All information required in §63.9(h). The owner or operator must provide a complete performance test report for each affected source and emission unit for which a performance test is required. A complete performance test report includes all data, associated measurements, and calculations (including visible emission and opacity tests).
  - 2) The approved site-specific test plan and performance evaluation test results for each continuous monitoring system.
  - 3) Unit labeling as described in 40 CFR §63.1506(b), including process type or furnace classification and operating requirements.
  - 4) The compliant operating parameter value or range established for the emission unit with supporting documentation and a description of the procedure used to establish the value; ( *e.g.* afterburner operating temperature) including the operating cycle or time period used in the performance test.
  - 5) Design information and analysis, with supporting documentation, demonstrating conformance with the requirements for capture/collection systems in 40 CFR §63.1506(c).
  - 6) The OM&M plan.
  - 7) Startup, shutdown, and malfunction plan, with revisions.
51. §63.1516 Reports. The owner or operator must comply with the applicable reporting requirements found in §63.1516 (a), (b), and (c).
52. §63.1516 (a) Startup, shutdown, and malfunction plan/reports. The owner or operator must develop a written plan as described in 40 CFR §63.6(e)(3) that contains specific procedures to be followed for operating and maintaining the source during periods of startup, shutdown, and malfunction, and a program of corrective action for malfunctioning process and air pollution control equipment used to comply with the standard. The owner or operator shall also keep records of each event as required by 40 CFR §63.10(b) and record and report if an action taken during a startup, shutdown, or malfunction is not consistent with the procedures in the plan as described in 40 CFR §63.6(e)(3). In addition to the information required in 40 CFR §63.6(e)(3), the plan must include:
- 1) Procedures to determine and record the cause of the malfunction and the time the malfunction began and ended; and
  - 2) Corrective actions to be taken in the event of a malfunction of a process or control device, including procedures for recording the actions taken to correct the malfunction or minimize emissions.
53. §63.1516 (b) Excess emissions/summary report. The owner or operator must submit semiannual reports according to the requirements in 40 CFR §63.10(e)(3). Except, the owner or operator must

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submit the semiannual reports within 60 days after the end of each 6-month period instead of within 30 days after the calendar half as specified in 40 CFR §63.10(e)(3)(v). When no deviations of parameters have occurred, the owner or operator must submit a report stating that no excess emissions occurred during the reporting period.

- 1) A report must be submitted if any of these conditions occur during a 6-month reporting period:
    - a. An excursion of a compliant process or operating parameter value or range ( *e.g.*, total reactive chlorine flux injection rate, afterburner operating temperature).
    - b. An action taken during a startup, shutdown, or malfunction was not consistent with the procedures in the plan as described in 40 CFR §63.6(e)(3).
    - c. An affected source was not operated according to the requirements of this subpart.
  - 2) Each report must include the following certifications:
    - a. For each thermal chip dryer: “Only unpainted aluminum chips were used as feedstock in any thermal chip dryer during this reporting period.”
    - b. For each sidewell group 1 furnace with add-on air pollution control devices: “Each furnace was operated such that the level of molten metal remained above the top of the passage between the sidewell and hearth during reactive fluxing, and reactive flux, except for cover flux, was added only to the sidewell or to a furnace hearth equipped with an add-on air pollution control device for D/F emissions during this reporting period.”
  - 3) The owner or operator must submit the results of any performance test conducted during the reporting period, including one complete report documenting test methods and procedures, process operation, and monitoring parameter ranges or values for each test method used for a particular type of emission point tested.
    - a. *Annual compliance certifications.* For the purpose of annual certifications of compliance required by 40 CFR part 70 or 71, the owner or operator must certify continuing compliance based upon, but not limited to, the following conditions:
      1. Any period of excess emissions, as defined in Proviso 53, that occurred during the year were reported as required by this subpart; and
      2. All monitoring, recordkeeping, and reporting requirements were met during the year.
54. §63.1517 Records. The owner or operator of these units must maintain records and information as required by 40 CFR §63.1517(a) and (b).
55. §63.1517 (a) Excess emissions/summary report. As required by 40 CFR §63.10(b), the owner or operator shall maintain files of all information (including all reports and notifications) required by the general provisions and 40 CFR 63, Subpart RRR.

**Permit No: 206-0040-X011**

- 1) The owner or operator must retain each record for at least 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. The most recent 2 years of records must be retained at the facility. The remaining 3 years of records may be retained off site.
  - 2) The owner or operator may retain records on microfilm, computer disks, magnetic tape, or microfiche; and
  - 3) The owner or operator may report required information on paper or on a labeled computer disk using commonly available and EPA-compatible computer software.
56. §63.1517 (b) In addition to the general records required by 40 CFR §63.10(b), the owner or operator these units must maintain records of:
- 4) Records of 15-minute block average afterburner operating temperature, including any period when the average temperature in any 3-hour block period falls below the compliant operating parameter value with a brief explanation of the cause of the excursion and the corrective action taken; and
  - 5) Records of annual afterburner inspections.
  - 6) Records of 15-minute block average weights of gaseous or liquid reactive flux injection, total reactive flux injection rate and calculations (including records of the identity, composition, and weight of each addition of gaseous, liquid or solid reactive flux), including records of any period the rate exceeds the compliant operating parameter value and corrective action taken.
  - 7) Records of feed/charge (or throughput) weights for each operating cycle or time period used in the performance test.
  - 8) Records of all charge materials for each thermal chip dryer.
  - 9) Operating logs for the group 1 sidewall furnace with add-on air pollution control devices documenting conformance with operating standards for maintaining the level of molten metal above the top of the passage between the sidewall and hearth during reactive flux injection and for adding reactive flux only to the sidewall or a furnace hearth equipped with a control device D/F emissions.
  - 10) Records of monthly inspections for proper unit labeling for each affected source and emission unit subject to labeling requirements.
  - 11) Records of annual inspections of emission capture/collection and closed vent systems.
  - 12) Current copy of all required plans, including any revisions, with records documenting conformance with the applicable plan, including:
    - a. Startup, shutdown, and malfunction plan;
    - b. OM&M plan.

**Borbet Alabama, Inc.**  
**Auburn, Alabama**  
**(Permit No.: 206-0040-X001)**  
**Provisos**

1. This permit is issued on the basis of Rules and Regulations existing on the date of issuance. In the event additional Rules and Regulations are adopted, it shall be the permit holder's responsibility to comply with such rules.
2. This permit is not transferable. Upon sale or legal transfer, the new owner or operator must apply for a permit within 30 days.
3. A new permit application must be made for new sources, replacements, alterations or design changes which may result in the issuance of, or an increase in the issuance of, air contaminants, or the use of which may eliminate or reduce or control the issuance of air contaminants.
4. Each point of emission will be provided with sampling ports, ladders, platforms, and other safety equipment to facilitate testing performed in accordance with procedures established by Part 60 of Title 40 of the Code of Federal Regulations, as the same may be amended or revised.
5. In case of shutdown of air pollution control equipment for scheduled maintenance for a period greater than two **(2) hours**, the intent to shut down shall be reported to the Air Division at least 24 hours prior to the planned shutdown, **unless accompanied by the immediate shutdown of the emission source.**
6. In the event there is a breakdown of equipment in such a manner as to cause increased emission of air contaminants for a period greater than two **(2) hours**, the person responsible for such equipment shall notify the Air Division within an additional 24 hours and provide a statement giving all pertinent facts, including the duration of the breakdown. The Air Division shall be notified when the breakdown has been corrected.
7. This process including all air pollution control devices and capture systems for which this permit is issued shall be maintained and operated at all times in a manner so as to minimize the emissions of air contaminants. Procedures for ensuring that the above equipment is properly operated and maintained so as to minimize the emission of air contaminants shall be established.
8. This permit expires and the application is cancelled if construction has not begun within 24 months of the date of issuance of the permit.
9. On completion of construction of the device(s) for which this permit is issued, written notification of the fact is to be submitted to the Chief of the Air Division. The notification shall indicate whether the device(s) was constructed as proposed in the application. The device(s) shall not be operated until authorization to operate is granted by the Chief of the Air Division. Failure to notify the Chief of the Air Division of completion of construction and/or operation without authorization could result in revocation of this permit.

**Permit No: 206-0040-X001**

10. Submittal of other reports regarding monitoring records, fuel analyses, operating rates, and equipment malfunctions may be required as authorized in the Department's air pollution control rules and regulations. The Department may require stack emission testing at any time.
11. Additions and revisions to the conditions of this Permit will be made, if necessary, to ensure that the Department's air pollution control rules and regulations are not violated.
12. Nothing in this permit or conditions thereto shall negate any authority granted to the Air Division pursuant to the Alabama Environmental Management Act or regulations issued there under.
13. This permit is issued with the condition that, should obnoxious odors arising from the plant operations be verified by Air Division inspectors, measures to abate the odorous emissions shall be taken upon a determination by the Alabama Department of Environmental Management that these measures are technically and economically feasible.
14. Precautions shall be taken to prevent fugitive dust emanating from plant roads, grounds, stockpiles, screens, dryers, hoppers, ductwork, etc.
15. Plant or haul roads and grounds will be maintained in the following manner so that dust will not become airborne. A minimum of one, or a combination, of the following methods shall be utilized to minimize airborne dust from plant or haul roads and grounds:
  - (a) by the application of water any time the surface of the road is sufficiently dry to allow the creation of dust emissions by the act of wind or vehicular traffic;
  - (b) by reducing the speed of vehicular traffic to a point below that at which dust emissions are created;
  - (c) by paving;
  - (d) by the application of binders to the road surface at any time the road surface is found to allow the creation of dust emissions;

Should one, or a combination, of the above methods fail to adequately reduce airborne dust from plant or haul roads and grounds, alternative methods shall be employed, either exclusively or in combination with one or all of the above control techniques, so that dust will not become airborne. Alternative methods shall be approved by the Department prior to utilization.
16. The permittee shall not use as a defense in an enforcement action that maintaining compliance with conditions of this permit would have required halting or reducing the permitted activity.
17. The issuance of this permit does not convey any property rights of any sort, or any exclusive privilege.

**Permit No: 206-0040-X001**

18. These units are subject to visible emission restrictions for stationary sources as stated in ADEM Administrative Code r. 335-3-4-.01(1) (a – b). Compliance with opacity standards in the Rule shall be determined by conducting observations in accordance with 40 CFR Part 60 Reference Method 9.
19. The PM emissions from the Three Aluminum Melting Furnaces shall not exceed 0.4 lbs/ton of material throughput measured in accordance with EPA Reference Method 5 as found in Appendix A of 40 CFR Part 60.
20. The owner or operator must operate each unit using only clean charge (ie. ingots, sows, clean returns, etc.) as the feedstock and operate each furnace using no reactive flux.
21. Clean charge is defined as furnace charge materials including molten aluminum, T-bar, sow, ingot, billet, pig, alloying elements, aluminum scrap known by the owner or operator to be entirely free of paints, coatings, and lubricants; uncoated/unpainted aluminum chips that have been thermally dried or treated by a centrifugal cleaner; aluminum scrap dried at 343 °C (650 °F) or higher; aluminum scrap delacquered/decoated at 482 °C (900 °F) or higher, and runaround scrap.
22. These units shall burn natural gas only.

**Borbet Alabama, Inc.**  
**Auburn, Alabama**  
**(Permit No.: 206-0040-X002)**  
**Provisos**

1. This permit is issued on the basis of Rules and Regulations existing on the date of issuance. In the event additional Rules and Regulations are adopted, it shall be the permit holder's responsibility to comply with such rules.
2. This permit is not transferable. Upon sale or legal transfer, the new owner or operator must apply for a permit within 30 days.
3. A new permit application must be made for new sources, replacements, alterations or design changes which may result in the issuance of, or an increase in the issuance of, air contaminants, or the use of which may eliminate or reduce or control the issuance of air contaminants.
4. Each point of emission will be provided with sampling ports, ladders, platforms, and other safety equipment to facilitate testing performed in accordance with procedures established by Part 60 of Title 40 of the Code of Federal Regulations, as the same may be amended or revised.
5. In case of shutdown of air pollution control equipment for scheduled maintenance for a period greater than two **(2) hours**, the intent to shut down shall be reported to the Air Division at least 24 hours prior to the planned shutdown, **unless accompanied by the immediate shutdown of the emission source.**
6. In the event there is a breakdown of equipment in such a manner as to cause increased emission of air contaminants for a period greater than two **(2) hours**, the person responsible for such equipment shall notify the Air Division within an additional 24 hours and provide a statement giving all pertinent facts, including the duration of the breakdown. The Air Division shall be notified when the breakdown has been corrected.
7. This process including all air pollution control devices and capture systems for which this permit is issued shall be maintained and operated at all times in a manner so as to minimize the emissions of air contaminants. Procedures for ensuring that the above equipment is properly operated and maintained so as to minimize the emission of air contaminants shall be established.
8. This permit expires and the application is cancelled if construction has not begun within 24 months of the date of issuance of the permit.
9. On completion of construction of the device(s) for which this permit is issued, written notification of the fact is to be submitted to the Chief of the Air Division. The notification shall indicate whether the device(s) was constructed as proposed in the application. The device(s) shall not be operated until authorization to operate is granted by the Chief of the Air Division. Failure to notify the Chief of the Air Division of completion of construction and/or operation without authorization could result in revocation of this permit.
10. Submittal of other reports regarding monitoring records, fuel analyses, operating rates, and equipment malfunctions may be required as authorized in the Department's air pollution control rules and regulations. The Department may require stack emission testing at any time.

**Permit No: 206-0040-X002**

11. Additions and revisions to the conditions of this Permit will be made, if necessary, to ensure that the Department's air pollution control rules and regulations are not violated.
  12. Nothing in this permit or conditions thereto shall negate any authority granted to the Air Division pursuant to the Alabama Environmental Management Act or regulations issued there under.
  13. This permit is issued with the condition that, should obnoxious odors arising from the plant operations be verified by Air Division inspectors, measures to abate the odorous emissions shall be taken upon a determination by the Alabama Department of Environmental Management that these measures are technically and economically feasible.
  14. Precautions shall be taken to prevent fugitive dust emanating from plant roads, grounds, stockpiles, screens, dryers, hoppers, ductwork, etc.
  15. Plant or haul roads and grounds will be maintained in the following manner so that dust will not become airborne. A minimum of one, or a combination, of the following methods shall be utilized to minimize airborne dust from plant or haul roads and grounds:
    - (a) by the application of water any time the surface of the road is sufficiently dry to allow the creation of dust emissions by the act of wind or vehicular traffic;
    - (b) by reducing the speed of vehicular traffic to a point below that at which dust emissions are created;
    - (c) by paving;
    - (d) by the application of binders to the road surface at any time the road surface is found to allow the creation of dust emissions;
- Should one, or a combination, of the above methods fail to adequately reduce airborne dust from plant or haul roads and grounds, alternative methods shall be employed, either exclusively or in combination with one or all of the above control techniques, so that dust will not become airborne. Alternative methods shall be approved by the Department prior to utilization.
16. The permittee shall not use as a defense in an enforcement action that maintaining compliance with conditions of this permit would have required halting or reducing the permitted activity.
  17. The issuance of this permit does not convey any property rights of any sort, or any exclusive privilege.
  18. These units shall burn natural gas only.